Golden Bear Forestry **108 Shasta Way, Mount Shasta, CA. 96067**

Barbara Arden
Saint Germain Foundation
Shasta Springs

September 16, 2013

RE: Port-Orford-Cedar Root Disease

Dear Barbara:

On September 4, 2013, Don Owen of Cal Fire, Pete Angwin of the USFS, both plant pathologists, Mac Hansen representing Shasta Springs, and I, conducted a field tour of the Shasta Springs, Cascade Falls Trail area. This site is an active infection center of Port-Orford-Cedar root disease. This site was first confirmed as an infection center in 2010 when dying trees had been previously noted and a field inspection was conducted to confirm what might be the possible cause, by the same above named group.

The recommendations at that time were to dry up wet spots on the trail and to provide some protocol measures for any users of the trail to minimize inadvertent spread of the disease by human foot traffic. Approximately 12-15 dead and dying Port-Orford-Cedar were observed at that time.

The area containing the Port-Orford-Cedar is an approximate 6-8 acre patch centered over the wet springs area below the rim of the Sacramento River, and bisected by the Cascade Falls Trail. In addition, there are Port-Orford-Cedar trees scattered along the edge of the railroad right-of-way where there are associated wet areas, between the end of the Cascade Falls Trail and Mossbrae Falls. There is not a continuous connection of Port-Orford-Cedar along this route, with separations of 1-200 feet between individuals and small groups. There is no root to root contact and there does not appear to be a water flow connection from the noted infection center to these trees.

The number of infected, dead and dying trees in the infection center has risen dramatically since 2010, with 50-60 trees observed on this visit. All of the Port-Orford-Cedar in this zone are at risk of being infected.

Recommendations:

Due to the high number of large, dead trees adjacent to the trail, it was discussed and agreed that immediate closure of the trail to use is recommended for safety reasons. It is uncertain when these dead trees may fall, but it will eventually happen, as well as limbs and branches falling from these trees.

If the trail is to be used in the future, then falling all of the Port-Orford-Cedar, dead and alive, within a 150'-200' distance of any portion of the trail is advised. This encompasses almost the entire location where Port-Orford-Cedar is present in the infected area, due to the serpentine nature of the trail. This will help with the safety issue and will provide some containment for spread of the disease. The disease

is persistent in the soil and roots for up to approximately 7 years after the host dies. All Port-Orford-Cedar would have to be eliminated from the infected zone for at least this many years to be effective. It is difficult to estimate what the cost would be to do such a project, but I expect it would be at least $5-6,000. There would have to be follow-up treatment for sprouting and germinating trees for the requisite time period.

Commercial removal of the Port-Orford-Cedar does not appear feasible due to the location, slope, presence of water, and scale of operation. Port-Orford-Cedar is very valuable, but removal costs would be extraordinarily high and will exceed any market value realized.

Development of an alternate trail to the soda springs at the bottom of this area might be a consideration, if the trail were to be located outside of the infection zone.

The Cascade Falls Trail and its associated bridges, are in need of some substantial repair work to keep the trail open and safe in any event. Some control and/or isolation of the current infection center is necessary to prevent spread of the disease to other areas.

Attached to this report is the report from Don Owen and Pete Angwin. **Gaylord Briggs, CA. RPF No. 70**